# A NEW SPECIES OF *THALAINODES* (LEPIDOPTERA: GEOMETRIDAE-ENNOMINAE) FROM CENTRAL AUSTRALIA

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A single female (the holotype) of this striking geometrid was collected by Mr Noel McFarland on 26 April 1966, 148 km S. of Alice Springs in Northern Territory, Central Australia. In late May, 1967, Mr McFarland and Mr T. R. Newbury collected a series of 14 more specimens of the same species (10 males, four females). This moth does not appear to be highly variable in colour or maculation. The most variable feature of its maculation is the black blotching on the hindwing. Males and females are similar in colour, maculation, and wing shape, but males have pectinate antennae, and most of the male specimens in the present series are smaller than the females.

Genus **Thalainodes** Lower (1902)
*Trans. R. Soc. S. Aust.* 1902, 26: 231.

Allied to *Thalaina;* differing in the frontal process in both sexes, and pectinate antennae in the male.

Type species: *Amelora tetraclada* Lower

**Thalainodes tetraclada** (Lower) 1900
*Amelora tetraclada* Lower, 1900, *Proc. Linn. Soc. N.S.W.*, 25: 406.
Locality: Broken Hill, N.S.W.

**Thalainodes paronycha** (Lower) 1900
*Amelora paronycha* Lower, 1900, *Proc. Linn. Soc. N.S.W.*, 25: 407.
Locality: Broken Hill, N.S.W.

**Thalainodes nessostoma** Turner 1919
*Proc. Linn. Soc. N.S.W.*, 44: 386.
Locality: Bourke, N.S.W.

**Thalainodes allochroa** Lower (1902)
*Trans. R. Soc. S. Aust.*, 26: 232.
Localities: Broken Hill, Bourke, N.S.W.

This genus appears to be confined to the dry country of the interior. Further collecting may show a much greater distribution for some of the species.

**Thalainodes macfarlandi** sp. nov.

*Head* (between antennal bases) white or greyish-white, with a prominent forward-projecting, bifurcate, heavily sclerotized frontal process (Pl. 11). Frontal process 1 mm max. length, deep brown, shiny, devoid of scales. Antennae pale brown; finely-pectinate in ♂. *Thorax* and patagia unmarked, white to greyish-white. Legs and abdomen unmarked, dull whitish with a satiny sheen.

*Length of forewing* from base to tip (along costal margin), varies from 21 to 23 mm in the ♀ (based on five specimens); length of forewing in the ♂ varies from 17 to 20·5 mm (based on 9 specimens).

*Forewing* (upperside ♂, ♀). Outer margin strongly convex from M1-M3; margin just below apex slightly excavated, producing a moderately falcate tip, which is slightly more evident in the ♀ (Pl. 11). Ground colour opaque pure white with a satiny sheen, contrastingly marked with pale to medium brown lines which are narrowly and sharply bordered with black; a line along costal margin from base to ¼, bending downward at ¼, crossing wing and bifurcating at discal cell, one branch extending directly to outer margin along M3, the other extending diagonally downward to fuse with a wide, pale grey-tinged brownish line along inner margin near anal angle; line along inner margin abruptly terminated (usually truncate) at 1-2 mm short of wing base; distally it continues for full length of outer margin to apex, becoming narrower from M2 to Cu1; a second short but prominent line along costal margin from ¾ to approximately 2 mm short of apex, bending abruptly down-

ward and outward, from ¾, to fuse with median line and M3 at outer margin; eilia pale brown shading to pale greyish near anal angle.

*Hindwing* (upperside ♂, ♀). Outer margin rounded. Translucent pure white with a faint sheen (less shiny than forewing); usually two variable, irregular, large dull black blotches at outer margin, which can be entirely separated or somewhat joined together (no two specimens are identical in these markings); eilia white.

*Forewing* (underside ♂, ♀). Costal and outer margins narrowly bordered by brown, but for a small break on costal margin just short of apex, where the satiny pure white ground colour reaches the margin; brown lines of upperside here mostly retraced with dull black; in some specimens this maculation faint or lacking along line which follows M3 from discal cell to outer margin; no maculation along inner margin.

*Hindwing* (underside ♂, ♀). Translucent pure white; black blotches of upperside roughly retraeted here, with some small parts missing, and often with an upward extension of the upper-most blotch (not repeated on upperside).

*Locality Records:*

N. TERRITORY, 148 km. S. of Alice Springs, near the Palmer River crossing, on the main road, 26 April 1966, N. McFarland, at uv. light (♀ HOLOTYPE); 45 km WSW. of Alice Springs, near the Hugh River crossing, on the main road, 30 May 1967, at uv. light, N.M. and T. N. (♀ PARATYPE); 19 km E. of Alice Springs, near Jessie Creek, 28 May 1967, at uv. light (3 ♀♀, 7 ♂♂, PARATYPES). S. AUSTRALIA 160 km NNW. of Coober Pedy, near Wintinna on the main road, 25 May 1967, N. McFarland and T. Newbury, at uv. light (1 ♂ PARATYPE); 61 km S. of Kulgera (N.T.), S. of Sundown, near the Alberga River crossing, on the main road, 26 May 1967, N. McFarland and T. R. Newbury, at uv. light (♂ ALLOTYPE).

Specimens are deposited in the following institutions:

HOLOTYPE, ALLOTYPE, and 3 PARATYPES (1 ♀, 2 ♂♂). S. Australian Museum (20,628), Adelaide; 2 ♂♂ (PARATYPES) J. O. Wilson collection; 1 ♂, 1 ♀ (PARATYPES) T. R. Newbury collection; 2 ♂♂ (PARATYPES) Australian Museum, Sydney; 1 ♂ (T-4235) 1 ♀ (T-4236) (PARATYPES) National Museum, Melbourne; 1 ♀ (PARATYPE) British Museum (Nat. Hist.), London.

## Remarks

*Thalainodes macfarlandi* is readily separated from other described species of the same genus by its very different maculation and its somewhat larger size. It is the only *Thalainodes* species having forewing maculation superficially very similar to that of *Thalaina angulosa* Walker, a well known species abundant in some areas of the Mt. Lofty Range, S. Australia. It is, however, easily distinguished from *T. angulosa* by the prominent frontal process on the head in both sexes, by the more attenuate forewing apex, by the pale drab brown lines on the forewing (lines rich rust-brown in *T. angulosa*), by the white or pale grey head (head rich orange-brown in *T. angulosa*), and by the pectinate antennae in the male.

Adults of *T. macfarlandi* are on the wing during autumn and early winter (April to June), probably reaching a peak during May. They often fly on rather cold nights, and come to light early in the evenings, before it gets still colder.

This species is almost certainly single-brooded. Eggs were obtained by Mr McFarland in May, 1967, and larvae were subsequently reared to final instar, at Blackwood, S.A., on a substitute foodplant, the coastal *Acacia pycnantha Benth.* (Mimosaceae). According to Mr McFarland, they were 'close to *Thalaina angulosa* larvae in general appearance but less colourful, having a ground colour of deep green, and a strong white and pale yellow spiracular line, which is on a crenulate ridge, slightly raised above the surrounding skin surface'. Photographs and preserved stages of the life history are under the McFarland code number 'G.180', at the S. Australian Museum, Adelaide.

## Explanation of Plate

*Thalainodes macfarlandi*, n. sp.

Upper figure female paratype (NMV Coll.)
Lower figure male allotype (SAM Coll.)